

IN THE CLAIMS

1. - 25. (Cancelled)

26. (Currently Amended) A human influenza immunogenic composition comprising a fusion product, said fusion product comprising

(i) an antigen that is an immunogenic extracellular part of (a) an M2 membrane protein of a human influenza A virus, (b) an NB protein of a human influenza B virus, or (c) a CM2 protein of a human influenza C virus, and

(ii) a heterologous peptide or polypeptide presenting carrier that is selected from the group consisting of a hepatitis B core protein, C3d, polypeptides comprising multiple copies of C3d, and tetanus toxin fragment C.

27. - 30. (Cancelled)

31. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the presenting carrier enhances the immunogenicity of the antigen.

32. (Previously Presented) The influenza immunogenic composition of claim 31, wherein the presenting carrier comprises an epitope recognized by an influenza-specific T helper cell or cytotoxic T cell.

33. (Cancelled)

34. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the immunogenic composition comprises Lactococci cells expressing said fusion product in or on their cell membrane, and said cells optionally release said fusion product.

35. (Cancelled)

36. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the fusion product is in an isolated form.

37. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the fusion product is anchored in the membrane of an acceptor cell expressing the fusion product.

38. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the fusion product is part of a lipid bilayer or cell wall.

39. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the influenza immunogenic composition comprises Lactococci cells expressing the fusion product in or on their cell wall.

40. (Previously Presented) The influenza immunogenic composition of claim 26, further comprising an influenza antigen selected from the group consisting of hemagglutinin, neuraminidase, nucleoprotein and native M2.

41. (Currently Amended) A method of obtaining a human influenza immunogenic composition, comprising
providing a fusion product, said fusion product comprising (i) an immunogenic extracellular part of (a) an M2 membrane protein of a human influenza A virus, (b) an NB protein of a human influenza B virus, or (c) a CM2 protein of a human influenza C virus, and (ii) a heterologous peptide or polypeptide presenting carrier that is selected from the group consisting of a hepatitis B core protein, C3d, polypeptides comprising multiple copies of C3d, and tetanus toxin fragment C; and
mixing it with an excipient.

42. - 45. (Cancelled)

46. (Currently Amended) A human influenza immunogenic composition obtained by the following steps:

providing a nucleic acid construct that encodes a fusion product, said fusion product comprising (i) an immunogenic extracellular part of (a) an M2 membrane protein of a human influenza A virus, (b) an NB protein of a human influenza B virus, or (c) a CM2 protein of a human influenza C virus, and (ii) a heterologous peptide or polypeptide presenting carrier that is selected from the group consisting of a hepatitis B core

Serial No. 09/498,046

protein, C3d, polypeptides comprising multiple copies of C3d, and tetanus toxin fragment C;

introducing the nucleic acid construct into an acceptor cell;

culturing the acceptor cell under conditions that allow expression of the fusion product;

optionally isolating the fusion product from the acceptor cell or its culture medium, and

optionally admixing the fusion product with an excipient,

thereby obtaining a human influenza vaccine comprising the fusion product.

47. - 51 (Cancelled)

52. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the influenza immunogenic composition comprises a cytokine.

53. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the influenza immunogenic composition comprises a vaccine adjuvant that is not Freund's adjuvant.

54. (Currently Amended) An influenza immunogenic composition for an animal species comprising a fusion product, said fusion product comprising

(i) an immunogenic extracellular part of (a) an M2 membrane protein of an influenza A virus or (b) an NB protein of an influenza B virus of said animal species; and

(ii) a heterologous peptide or polypeptide presenting carrier that is selected from the group consisting of a hepatitis B core protein, C3d, polypeptides comprising multiple copies of C3d, and tetanus toxin fragment C.

55. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the fusion product comprises the entire extracellular domain of the M2 protein

56. (Previously Presented) The influenza immunogenic composition of claim 55, wherein the amino acid sequence of said entire extracellular domain is SEQ ID NO:1, 2, or 3.

57. (Previously Presented) The influenza immunogenic composition of claim 26, wherein the fusion product comprises the entire extracellular domain of the NB or CM2 protein.

Please add new claims 58-61 as follows:

58. (New) A human influenza immunogenic composition comprising a fusion polypeptide, said fusion polypeptide comprising

(i) an antigen that is an immunogenic extracellular part of (a) an M2 membrane protein of a human influenza A virus, (b) an NB protein of a human influenza B virus, or (c) a CM2 protein of a human influenza C virus, and

(ii) a heterologous peptide or polypeptide presenting carrier,

said fusion polypeptide being the expression product of a gene construct comprising a coding sequence for a immunogenic extracellular portion of an influenza virus of (i) linked to a coding sequence for a presenting carrier peptide or polypeptide of (ii).

59. (New) The influenza immunogenic composition of claim 58, wherein said antigen is an immunogenic extracellular part of an M2 membrane protein of a human influenza A virus.

60. (New) The influenza immunogenic composition of claim 58, wherein said heterologous peptide or polypeptide presenting carrier is selected from the group consisting of a hepatitis B core protein, C3d, polypeptides comprising multiple copies of C3d, and tetanus toxin fragment C.

61. (New) The influenza immunogenic composition of claim 60, wherein said heterologous peptide or polypeptide presenting carrier is the hepatitis B core protein.